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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,715	06/05/2006	Baolin Tan	P2003-06-01 (191145/US)	3838
71089 7590 10/07/2010 DORSEY & WHITNEY LLP on behalf of EchoStar Technologies, L.L.C. 370 Seventeenth St. Suite 4700 Denver, CO 80202-5647			EXAMINER ZHAO, DAQUAN	
			ART UNIT 2484	PAPER NUMBER
			NOTIFICATION DATE 10/07/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/559,715	<b>Applicant(s)</b> TAN ET AL.	
	<b>Examiner</b> DAQUAN ZHAO	<b>Art Unit</b> 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :6/26/2009; 5/26/2009; 4/16/2009; 3/26/2007; 6/5/2006.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 56,59, 63-65 are rejected under 35 U.S.C. 101 because claims are directed to non-statutory subject matter based upon consideration of all of the relevant factors with respect to the claim as a whole, claim(s) 56,59, 63-65 held to claim an abstract idea, and is/are therefore rejected as ineligible subject matter under 35 U.S.C. 101. The rationale for this finding is explained below:

Claim 56 is directed to a computer program product, which is software per se, and software per se is a non-statutory subject matter. Also, considering the claim as “functional descriptive material” imparts with functionality, but not being employed as a computer component (or other physical structures), is considered not statutory. “In contrast, a claimed computer-readable medium encoded with a computer program... is thus statutory.” (See “*Interim Guideline for Examination of Patent Application for Patent Subject Matter Eligibility*”, ANNEX IV, Page 53, First Paragraph;).

Claims 59, 63-65 are directed to “a modified video signal”, wherein a signal is a non-statutory subject matter. The invention as disclosed in claims 59, 63-65, directed to a signal, are rejected under 35 U.S.C. 101 as being non- statutory subject matter. While applicant's invention is directed towards technological arts. Applicant's claim language is not limited to practical applications. Furthermore, for such subject matter to be

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statutory, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm in the technological arts. See *Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *Alappat* 33 F.3d at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) at 114-19). A claim is limited to a practical application when the method or system, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. See *AT&T*, 172 F.3d at 1358, 50 USPQ2d at 1452. See MPEP § 2106(IV). If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. *Schrader*, 22 F.3d at 294-95, 30 USPQ2d at 1458-59. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process. Applicant is advised to make the appropriate corrections in an attempt to gain patentability. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02. Remember, the claims define the property rights provided by a patent, and thus require careful scrutiny. Therefore, it is not enough to set forth invention in the specification. The claims must also reflect the scope and breadth of applicant's invention. The claims must also reflect the scope and breath of applicant's

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invention. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541,550-551(CCPA 1969).

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 63 is rejected under 35 U.S.C. 102(b) as being anticipated by Ryan (US 6,188,832), hereinafter reference as Ryan832.

For claim 63, Ryan teaches a modified video signal in which the amplitude of a horizontal sync pulse is altered (e.g. abstract, column 3, lines 13-26, “The sync level and the sync duration of the selected lines are also reduced), either by increasing its amplitude over at least part of the duration of the pulse, or by reducing its amplitude over at least part of the duration of the pulse, and/or in which the level of the signal in at least part of the back porch is altered (e.g. column 3, lines 13-26, the voltage amplitudes of a portion of the back porch interval following the trailing edges of a substantial number of sync pulses are significantly raised and lowered to improve the

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playability of the original signal without reducing the effectiveness of the copy protection of the copied signal), such that the signal when viewed on a standard television shows an image of acceptable viewability, but, when applied to a video capture system either it cannot be properly converted or it is converted to a digital signal which cannot be played or which, when played, shows an image which is not of acceptable viewability (e.g. column 3, lines 45-59, "...produces noisy unstable pictures").

4. Claim 63 is rejected under 35 U.S.C. 102(b) as being anticipated by Quan (US 7,236,683 B2), hereinafter referenced as Quan683.

For claim 63, Quan teaches a modified video signal in which the amplitude of a horizontal sync pulse is altered (e.g. figures. 3 A-3E, column 5, lines 59-67, "copy protection signal, also see column 2, lines 31-64), either by increasing its amplitude over at least part of the duration of the pulse, or by reducing its amplitude over at least part of the duration of the pulse (e.g. column 6, lines 14-24, amplitude extending pulse 38 is added to the level of the normal H sync signal 30 to provide an amplitude extended H sync signal), and/or in which the level of the signal in at least part of the back porch is altered (e.g. column 6, lines 14-24, The AGC pulse 44 is added to the waveform in the back porch region), such that the signal when viewed on a standard television shows an image of acceptable viewability, but, when applied to a video capture system either it cannot be properly converted **or** it is converted to a digital signal which cannot be played or which, when played, shows an image which is not of

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acceptable viewability (e.g. figures. 3 A-3E, column 5, lines 59-67, copy protection signal, also see column 2, lines 31-64).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 34-46, 48, 50, 54- 57, 59-62, 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US 5,315,448), hereinafter referenced as Ryan448, and further in view of Quan (US 7,236,683 B2), hereinafter referenced as Quan683.

For claim 1, Ryan448 teaches a method of modifying an analogue video signal to impair analogue to digital conversion of the signal, outputting the modified video signal, receiving an original video signal for modification (e.g. figure 1, A/D converter), wherein the modified video signal is such that the modified video signal interferes with the operation of an analogue to digital video conversion system (e.g. figure 1 shows a A/D converter 16) to such an extent that, if a digital video signal is output, the output digital signal has a reduced quality on playback in comparison to the original analogue video signal (e.g. column 8, lines 34-45, an automatic gain control circuit for reducing



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the level of the video signal, in the analogue to digital conversion process to, so that the copy of the video signal would be unacceptable for viewing).

Ryan448 does not further teach modifying at least one of the horizontal synchronization pulses from its original form to have a greater or a smaller amplitude over at least a part of the pulse width; and/or modifying the region of the signal following the horizontal synchronization pulse, either in the back porch or adjacent to it, from its original form.

Quan683 teach modifying at least one of the horizontal synchronization pulses from its original form to have a greater or a smaller amplitude over at least a part of the pulse width (e.g. figures. 3 A-3E, column 5, lines 59-67, column 6, lines 14-24, amplitude extending pulse 38 is added to the level of the normal H sync signal 30 to provide an amplitude extended H sync signal); and/or modifying the region of the signal following the horizontal synchronization pulse, either in the back porch or adjacent to it, from its original form(e.g. column 6, lines 14-24, The AGC pulse 44 is added to the waveform in the back porch region). It would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate the teaching of Quan683 into the teaching of Ryan448 to enhance the playability of the applied copy protected video signal while maintaining the copy protection effectiveness (e.g. Quan683, abstract).

Claim 57 is rejected for the same reasons as discussed in claim 1 above.

Claim 59 is rejected for the same reasons as discussed in claim 1 above.

Claim 56 is rejected for the same reasons as discussed in claim 1 above.

Claim 60 is rejected for the same reasons as discussed in claim 1 above.

Claim 62 is rejected for the same reasons as discussed in claim 1 above.

For claim 54, Ryan445 teach inputting the output modified video signal into an analogue to digital converter (e.g. figure 1, A/D converter 16).

For claim 34, Ryan445 teaches consulting an analogue to digital conversion device response model, and modifying the amplitude of the synchronization pulse, or modifying the region of the signal following the horizontal pulse, in dependence on the analogue to digital conversion device response model(e.g. column 8, lines 34-45, an automatic gain control circuit for reducing the level of the video signal, in the analogue to digital conversion process to, so that the copy of the video signal would be unacceptable for viewing).

For claim 35, Ryan 445 teaches consulting a display device response model, and modifying the amplitude of the synchronization pulse, or modifying the region of the signal following the horizontal pulse, in dependence on the display device model (e.g. column 8, lines 34-45, an automatic gain control circuit for reducing the level of the video signal, in the analogue to digital conversion process to, so that the copy of the video signal would be unacceptable for viewing).

For claim 36, Ryan445 teaches consulting several response models and varying the modifications over time(e.g. column 8, lines 34-45, an automatic gain control circuit for reducing the level of the video signal, in the analogue to digital conversion process to, so that the copy of the video signal would be unacceptable for viewing).

For claim 37, Quan683 teaches the amplitude of the synchronization pulse is adjusted to be in the range -280 mV to -150 mV (e.g. column 2, lines 50-64).

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For claim 38, Quan683 teaches the amplitude of the synchronization pulse is adjusted to be in the range -250 mV to -200 mV(e.g. column 2, lines 50-64).

For claim 39, Quan683 teaches the amplitude of the synchronization pulse is adjusted over a duration of about 30% to 100% of the pulse width (e.g. column 2, lines 50-64).

For claim 40, Quan683 teaches the amplitude of the synchronization pulse is adjusted to be in the range -320 mV to -600 mV (e.g. column 2, lines 50-64).

For claim 41, Quan683 teaches the amplitude of the synchronization pulse is adjusted to be in the range -350 mV to -450 mV (e.g. column 2, lines 50-64).

For claim 42, Quan683 teaches the amplitude of the synchronization pulse is adjusted over a duration of about 30% to 90% of the pulse width (e.g. column 2, lines 50-64).

For claim 43, Quan683 teaches the amplitude of the synchronization pulse is adjusted only after the beginning of the synchronization pulse (e.g. column 2, lines 50-64).

For claim 44, Quan683 teaches wherein the back porch of the signal is modified by adjusting the signal level away from the OV level (e.g. column 2, lines 50-64).

For claim 45, Quan683 teaches wherein the back porch of the signal is modified by adding a pulse of positive or negative amplitude in the range 30 mV to 200 mV (e.g. column 2, lines 50-64).

For claim 46, Quan683 teaches wherein the amplitude of the pulse is in the range 50 to 150 mV (e.g. column 2, lines 50-64).

For claim 48, Quan683 teaches the pulse occurs immediately after the synchronization pulse (e.g. figure 2, back porch is immediately after the Hsync 30).

For claim 50, Quan683 teaches the region of the signal following the synchronization pulse is modified by inserting a pulse into lines which appear in the over scan region of the signal (e.g. figure 2E the extended burst Gate is inserted into the back porch).

For claim 55, Quan683 teaches the amplitude of the modifications are varied over time between zero, at which the modified signal is substantially identical to an unmodified signal, and full scale at which the modifications are fully present (e.g. figure 2).

For claim 61, Ryan448 teaches recording the modified signal onto a storage medium (e.g. figure 1, Digital Tape Deck 10).

For claim 64, Quan683 teaches least some of the characteristics of the alterations have been determined during or following a conversion impairment optimization process (e.g. figure 2, back porch is immediately after the Hsync 30).

For claim 65, Quan683 teaches the original video signal and the modifications to the video signal are generated at the same time and combined to form a resulting signal for output (e.g. figure 2, back porch is immediately after the Hsync 30).

7. Claims 47, 49, 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US 5,315,448, Ryan448), and Quan (US 7,236,683 B2, Quan683), as

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applied to claims 1, 34-46, 48, 50, 54- 57, 59-62, 64-65, and further in view of Ryan (US 6,188,832, Ryan832).

For claim 47, Ryan448 and Quan683 do not further disclose the pulse has a duration of between 250 ns and 4 .mu.s. Ryan832 teach the pulse has a duration of between 250 ns and 4 .mu.s (e.g. figure 1, Burst Duration 2.25 us-> 230ns). It would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryan832 into the teaching of Ryan448 and Quan683 to enhance the playability of the applied copy protected video signal while maintaining the copy protection effectiveness.

For claim 49, Ryan832 teach the pulse occurs 4.8 .mu.s after the falling edge of the synchronization pulse (e.g. figure 1, Line-Sync Pulse 4.7us->200ns).

For claim 51, Ran832 teaches the pulse is inserted between 10 .mu.s and 30 .mu.s after the falling edge of the synchronization pulse (e.g. figure 3).

For claim 52, Ran832 teaches the pulse has a duration of between 10us and 58us (e.g. figure 1, Nominally 10.4 us).

For claim 53, Ran832 teaches the pulse has a duration of between 15 .mu.s and 35 .mu.s (e.g. figure 1, Nominally 10.4 us).

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wonfor et al (US 7,620,178).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daquan Zhao whose telephone number is (571) 270-1119. The examiner can normally be reached on M-Fri. 7:30 -5, alt Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Thai Q, can be reached on (571)272-7382. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daquan Zhao/

Examiner, Art Unit 2621

/Jamie J Atala/

Primary Examiner, Art Unit 2621